

CLAIMS

1. A titanium oxide complex, comprising: a polymer-based material having an active group; and titanium
5 oxide having a reactive functional group which is capable of reacting with the active group, wherein the active group and the reactive functional group are bonded to each other based on a chemical bond.

10 2. The titanium oxide complex as set forth in claim 1, wherein the chemical bond is an amido bond.

3. The titanium oxide complex as set forth in claim 1, wherein the polymer-based material is silicone rubber.

15 4. The titanium oxide complex as set forth in claim 1, wherein the titanium oxide having the reactive functional group which is capable of reacting with the active group has a photocatalyst property.

20 5. A medical material, comprising the titanium oxide complex as set forth in claim 1.

25 6. A titanium oxide complex, comprising: a hydroxyl group contained in titanium oxide; and a polymer-based

material having a functional group which is capable of chemically bonding to the hydroxyl group, wherein the hydroxyl group and the polymer-based material are bonded to each other based on a chemical bond.

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7. The titanium oxide complex as set forth in claim 6, wherein the functional group is an alcoxysilyl group and/or an isocyanate group.

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8. The titanium oxide complex as set forth in claim 6, wherein the polymer-based material is silkfibroin.

9. A medical material, comprising the titanium oxide complex as set forth in claim 6.

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10. A method of producing a titanium oxide complex, comprising:

an active group introduction step of introducing an active group into a polymer-based material;

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a reactive functional group introduction step of introducing a reactive functional group, which is capable of reacting with the active group, into titanium oxide; and

a reaction step of reacting the active group with the reactive functional group.

11. The method as set forth in claim 10, wherein a silane coupling agent having the reactive functional group is used in the reactive functional group introduction step.

5 12. The titanium oxide complex as set forth in claim 10, wherein the active group is a carboxyl group, and the reactive functional group is an amino group.

10 13. The method as set forth in claim 10, wherein the polymer-based material is a medical polymer material.

14. A method of producing a titanium oxide complex, comprising:

15 an introduction step of introducing a functional group, which is capable of chemically bonding to a hydroxyl group contained in titanium oxide, into a polymer-based material; and

20 a functional group reaction step of reacting the functional group of the polymer-based material with the hydroxyl group contained in the titanium oxide.

15. The method as set forth in claim 14, wherein the functional group is at least one kind selected from a group of an alcoxysilyl group and an isocyanate group.

16. The method as set forth in claim 14, wherein a silane coupling agent having the functional group is used in the introduction step.

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17. The method as set forth in claim 14, wherein the polymer-based material is a medical polymer material.